

# 074 NATURALLY ASPIRATED RADIATION SHIELD OPERATION MANUAL

074-9800, REV A



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# 1 INTRODUCTION

## 1.1 About This Manual

This document is organized with the most important information toward the front of the manual. All users should read and understand the sections on setup, operation, and maintenance. Toward the back are sections that provide in-depth information on subjects such as diagnostics and accessories. These sections should be consulted as needed.

This manual is periodically revised for maximum accuracy and to incorporate new features or updates. User feedback is welcome. Electronic versions of this manual are available upon request.

## 1.2 Technical Service

Should support still be required after consulting the printed documentation, contact one of the expert Met One Instruments, Inc. Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Standard Time, Monday through Friday. In addition, technical information and service bulletins are often posted on our website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service.

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Please have the instrument serial number available when contacting the manufacturer. On most models manufactured by Met One Instruments, it will be located on a silver product label on the unit, and also printed on the calibration certificate. The serial number will begin with a letter and be followed by a unique five digit number such as U15915.

### 1.3 074 Naturally Aspirated Solar Radiation Shield



**Figure 1-1 Solar Radiation Shield Model 074**

The Model 074 is a naturally aspirated solar radiation shield designed to be used with attached sensors. The sensor is shielded by concentric plastic plates to reflect solar energy and cooled to ambient conditions by wind passing through the plates and over the sensor. The shield is designed to greatly reduce errors due to direct solar radiation and reflected terrestrial radiation.

## 1.4 Model 074 Specifications

PARAMETER	SPECIFICATION
<b>Mounting:</b>	U-bolt to either vertical or horizontal pipe ¾ IPS (1.05" OD) to 1.5 IPS (1.90" OD)
<b>Dimensions:</b>	7 inches diameter, 8 inches height (less sensor)
<b>Weight:</b>	2 pounds (less sensor)

Specifications may be subject to change without notice.

## 2 SITE SELECTION and POSITIONING CRITERIA

The installation site of the 074 should be chosen by following all local requirements and EPA guidelines as closely as possible. Contact the local EPA representative with any questions.

## 3 SETUP

Use the following information to correctly assemble, configure, and deploy the 074. Installation of the 074 should ideally be performed by personnel familiar with environmental monitoring equipment. There are no special precautions or handling concerns except for the normal level of care required for handling scientific equipment. Refer to the instructions and diagrams on the following pages.

### 3.1 Unpacking

Unpack the radiation shield and accessories and compare them to the packing list to make sure all items are present.

Any damage incurred to the equipment during shipping are the responsibility of the carrier. If any damage to the shipment is noticed before unpacking, **a claim must be filed with the commercial carrier immediately**. Follow any special unpacking instructions provided by the carrier as all items are carefully removed from the containers and each component inspected. It is recommended to document and photograph all damaged packages and items before, during, and after unpacking them. Contact Met One Instruments (see section 1.2 of this manual) to arrange for any replacement items needed.

The normal instrument configuration is supplied with the following standard accessories:

#### 074 includes

- One (1) U-Bolt Mounting Kit (part number 9104-1)
  - One (1) U-Bolt, ¼-20, SST
  - Two (2) ¼ SST Flat Washer
  - Two (2) ¼ SST Split Lock Washer
  - Two (2) ¼-20 SST Hex Nut
- One (1) Operating Manual

Please keep all of the special shipping items (box, foam packing material, etc.) used to ship the 074. They should be re-used if the 074 is to be transported (changing site locations, returning to the factory, etc.). Contact Met One Instruments (see section 1.2 of this manual) for replacement packing materials if necessary.

### 3.2 Installation

The 074 radiation shield should arrive fully assembled and ready to install with the accompanying mounting hardware contained in a separate bag. The shield is designed for easy setup and deployment, allowing it to be used for either permanent long-term sampling at a fixed site or for portable sampling in temporary applications. The built in mounting plate allows for convenient installation on either a vertical or horizontal mounting pole.



Figure 3-1 074 Mounting Options

To deploy the shield, simply position the mounting plate of the 074 on the mounting pole, and then insert the U-bolt through the appropriate holes in the plate. The mounting pole should be pinched between the mounting plate of the shield and the U-bend in the bolt as shown in Figure 3-1. Use the provided nuts and washers to secure the shield in place.

## 4 MAINTENANCE

The 074 is designed to be easy to maintain with minimal upkeep. In order to maintain proper reflectivity, the shield should be inspected at least annually. Any dirt or debris build up should be thoroughly cleaned to keep the shield plates as white as possible. Particularly dirty locations may require more frequent cleaning to maintain the integrity of the shield.